

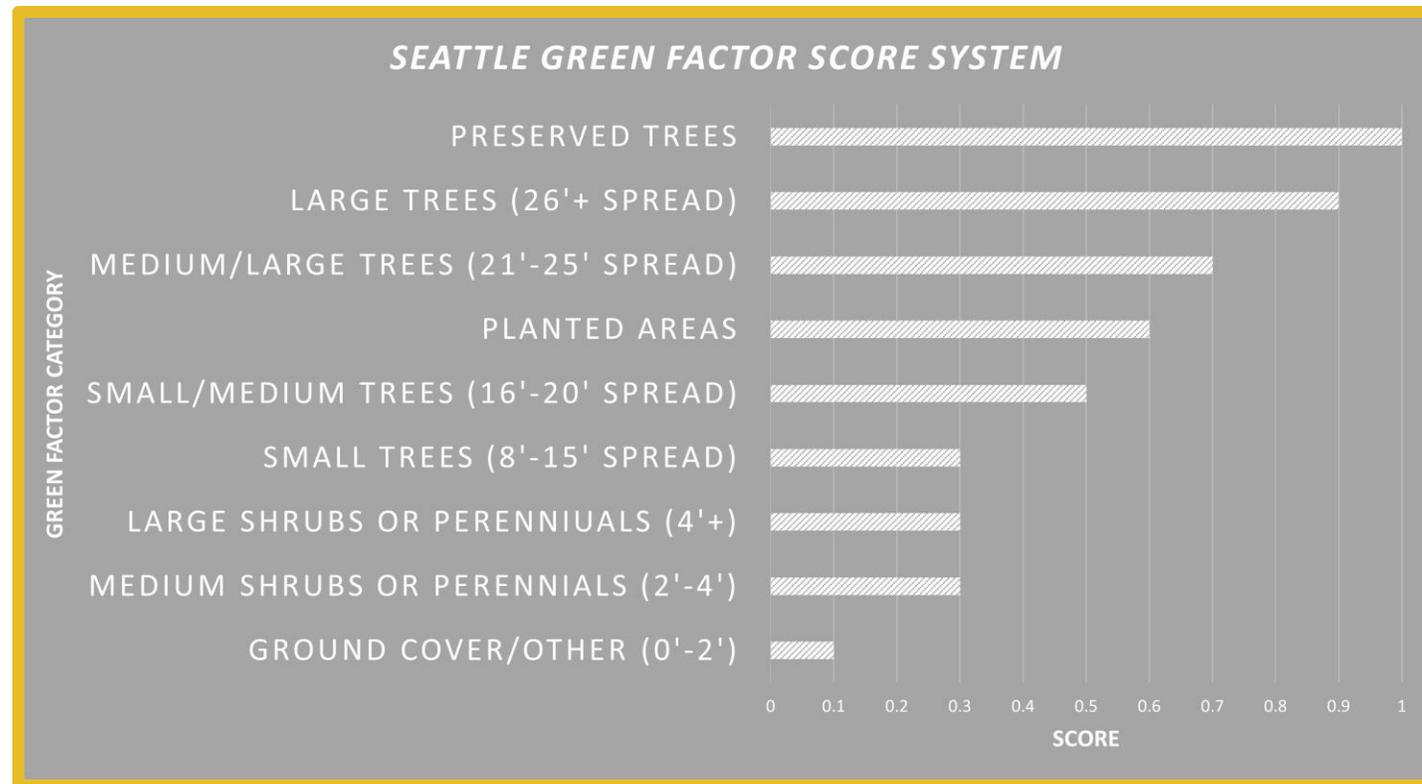
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# Green Factor Plants and Trees List 2024 Update

Internship Project  
Landscape Architect's Office  
SDOT Urban Forestry  
September 2024

# What is Seattle Green Factor?

**Seattle Green Factor** is score-based system of landscape criteria required by City code for new developments.



A bar chart showing Green Factor score categories and numeric value.

# What are the Green Factor Plants and Trees Lists?

These lists are a **guidance tool** for selecting plants and trees for Green Factor landscapes.

### Seattle Green Factor Plant List

**Notes:**

- All plants on this list are drought-tolerant once they are established unless comments indicate otherwise.
- Seattle Department of Transportation's Right-of-Way Improvement Manual establishes height limits for non-street-tree plantings in rights-of-way. Maximum plant height within 30 feet of an intersection (as measured from the corner of the curb) is 24 inches. Elsewhere in the right-of-way, plantings are allowed to be 30 inches tall.
- "Bioretention Zone" describes where plants can appropriately be used in bioretention systems such as swales and rain gardens. Zone 1 is the designation for plants that can be used in the flat bottoms of bioretention facilities. 1A refers to species that prefer soil saturation or shallow inundation for long durations, while Zone 1B refers to plants that can alternate between dry and short-term saturated conditions. Zone 2 is the designation for plants best used at the well-drained slopes of bioretention facilities. All other species are appropriate for planting at the tops of bioretention areas.

GROUNDCOVERS									
Scientific Name	Common Name	Evergreen	Shade	Sun	Native	up to 24"	2-3' ht	Bioretention Zone	Notes
<i>Arctostaphylos uva-ursi</i>	kinnikinnick	•	•	•	•	•			
<i>Azaron caudatum</i>	wild ginger	•	•	•	•	•			
<i>Calluna</i> , in variety	heather	•	•	•	•	•			
<i>Ceratostigma plumbeoides</i>	hardy plumbago	•	•	•	•	•			
<i>Daboecia cantabrica</i>	Irish heath	•	•	•	•	•			
<i>Erica</i> , in variety	heath	•	•	•	•	•			
<i>Erigeron karwinskianus</i>	Latin American fleabane	•	•	•	•	•			
<i>Eryonimus fortunei</i> 'colorata'	winterhegger aucynomus	•	•	•	•	•			
<i>Festuca glauca</i>	blue fescue	•	•	•	•	•			
<i>Fragaria chilensis</i>	beach strawberry	•	•	•	•	•			Aggressive
<i>Fragaria x 'Lipslick'</i>	pink-flowered barren strawberry	•	•	•	•	•			Aggressive
<i>Genista lysia</i>	hardy dwarf broom	•	•	•	•	•			
<i>Genista pilosa</i>	silkyleaf broom	•	•	•	•	•			
<i>Juniperus conferta</i>	shore juniper	•	•	•	•	•			
<i>Microbiota decussata</i>	Russian arbutivite	•	•	•	•	•		2	
<i>Pachysandra terminalis</i>	Japanese spurge	•	•	•	•	•			
<i>Pachysandra procumbens</i>	Allegheny pachysandra	•	•	•	•	•			
<i>Paxistima canbyi</i>	Canby paxistima	•	•	•	•	•			
<i>Rubus pentalobus</i>	creeping bramble	•	•	•	•	•			
<i>Vinca minor</i>	periwinkle	•	•	•	•	•			

PERENNIALS / FERNS / GRASSES									
Scientific Name	Common Name	Evergreen	Shade	Sun	Native	up to 24"	2-3' ht	Bioretention Zone	Notes
<i>Achillea millefolium</i>	yarrow	•	•	•	•	•			
<i>Allium</i> , in variety	ornamental allium	•	•	•	•	•			
<i>Arnica sylvestris</i> 'Misty Lace'	dwarf goatsbeard	•	•	•	•	•		1B	
<i>Aster</i> , in variety	aster	•	•	•	•	•			
<i>Athyrium filix-femina</i>	lady fern	•	•	•	•	•			

### Green Factor Trees (Sorted according to criteria)

Group	Botanical Name	Common Name	Height	Spread	Shape	Volume	Strip Width	Wires	Fall Color	Comments	Street Tree	Native Tree
<b>Large</b>												
	<i>Abies grandis</i>	Grand Fir	100	35		0		<input type="checkbox"/>		Grows at 0-1500 m in moist conifer forests	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<i>Abies procera</i>	Noble Fir	90	30		0		<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
	<i>Acer freemanii</i> 'Autumn Blaze'	Autumn Blaze M	50	40		37700	6	<input type="checkbox"/>	Orange		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Acer macrophyllum</i>	Big Leaf Maple	100	80	Rounded	0		<input type="checkbox"/>	yellow / brown	Very large native	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<i>Acer platanoides</i> 'Emerald Que'	Emerald Queen	50	40		50300	6	<input type="checkbox"/>	Yellow		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Acer saccharum</i> 'Bonfire'	Bonfire Sugar Ma	50	40	Oval	50300	6	<input type="checkbox"/>	Bright orange red	Fastest growing sugar maple.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Acer saccharum</i> 'Commemorat'	Commemoration	50	35		38500	6	<input type="checkbox"/>	Orange to orange-red	Resistant to leaf tatter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Acer saccharum</i> 'Legacy'	Legacy Sugar Ma	50	35		38500	5	<input type="checkbox"/>	Yellow or orange/red	Limited use - where sugar maple is desired in standard planting strips	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Aesculus flava</i>	Yellow Buckeye	70	40		0		<input type="checkbox"/>	yellow / orange	yellow flowers - least susceptible to leaf blotch - large fruit	<input type="checkbox"/>	<input type="checkbox"/>
	<i>Alnus rubra</i>	Red Alder	70	35	Broadly cori	0		<input type="checkbox"/>	yellow / brown	nitrogen fixing	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<i>Cercidiphyllum japonicum</i>	Katsura Tree	40	40	Oval	37700	6	<input type="checkbox"/>	Yellow to orange	Needs lots of water when young	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Fagus sylvatica</i>	Green Beech	50	40	Oval	50300	6	<input type="checkbox"/>	Bronze	Silvery-grey bark.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Fagus sylvatica</i> 'Asplenifolia'	Fernleaf Beech	60	60		0	6	<input type="checkbox"/>	golden / brown	Beautiful cut leaf	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<i>Fraxinus latifolia</i>	Oregon Ash	60	35		0		<input type="checkbox"/>	yellow / brown	Only native ash in PNW	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# Who Uses the Green Factor Plants and Trees Lists?

- Private developers, design firms, and planning firms
- City reviewers in Urban Forestry, Construction and Inspections
- City Ecologists and other City employees

# Where is Seattle Green Factor Required?

Some of the zones where Green Factor applies are:

- Midrise and Highrise Multifamily Residential
- Lowrise Multifamily Residential
- Commercial and Neighborhood Commercial
- Industrial Commercial
- South Downtown

Minimum score requirements for Green Factor vary by zone.

# Seattle Neighborhoods are Becoming More Dense

This means:

- Larger building footprints or multiple buildings on a parcel
- New and updated utilities
- Sidewalk improvements
- Space reserved for additional trash and recycling bins or dumpsters

Densification also means a significant reduction of soil volume available for planting or retaining large canopy trees.

2015



NE 57<sup>th</sup> St & Roosevelt Way NE

2021

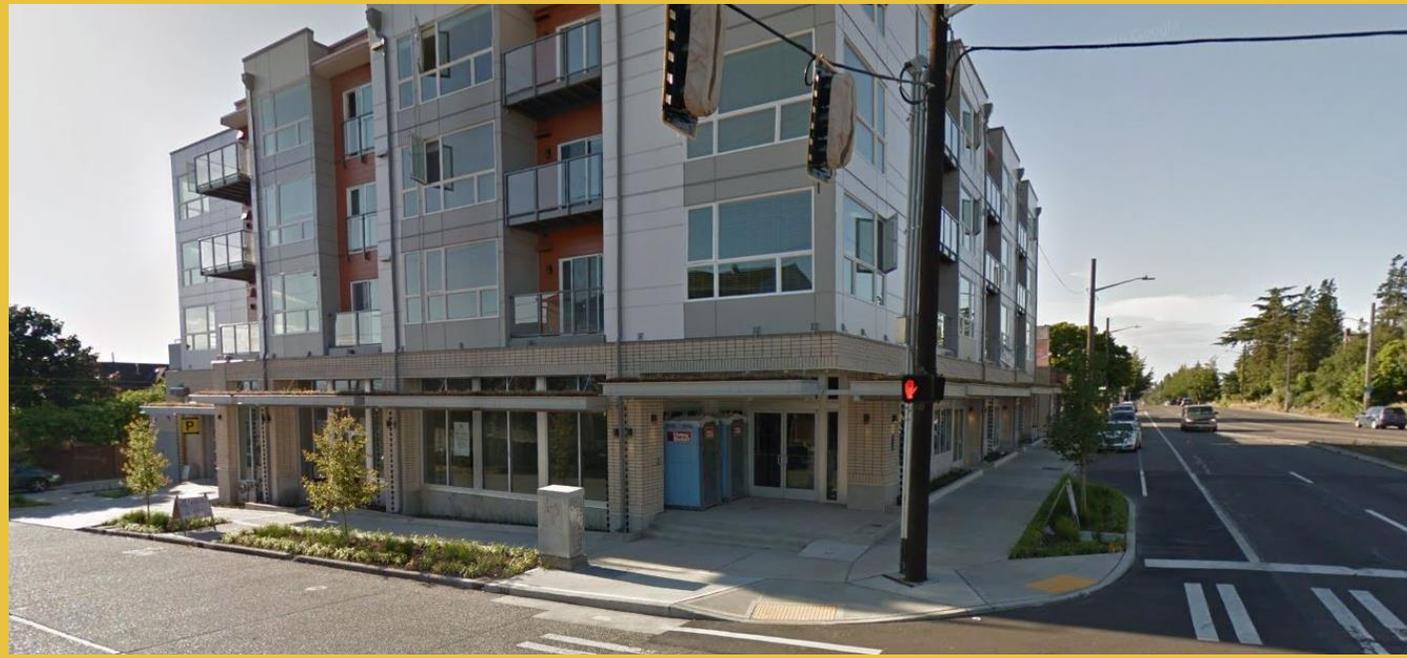


2014



15<sup>th</sup> Ave S & S Oregon St

2017





# Editing the List in 2024

# Why is an Update Important?

The Lists need to offer guidance on plant and tree selections that can withstand the spatial and environmental conditions of development and climate change.

Recommended plants and trees need to:

- Cope with densification
- Meet climate challenges
- Anticipate pests and diseases
- Provide for native species
- Enhance urban ecological systems



Right: A native great spangled fritillary, *Speyeria cybele*, on the flower of showy milkweed, *Asclepias speciosa*.

# 2024 Plant Selection Criteria

This update brings emphasis to:

- Native plants and climate adaptive selections
- Species diversity
- Selections known to offer habitat and/or forage
- “Good neighbor” species

The update also removes:

- Invasive and known weedy species



Right top: A native bee, *Melissodes pullatela*, feeds on Puget gumweed, *Grindelia integrifolia*.

Below: A turf mix of mostly native selections, including annual baby blue eyes, *Nemophila menziesii*, and perennial Romer’s fescue, *Festuca romerii*.

## Example: *Betula nigra* and cultivars

- Native tree
- Similar aesthetic qualities to *Betula papyrifera* and *Betula utilis*
- Resistant to Bronze Birch Borer
- Cultivars such as ‘Dura Heat’ are heat and drought tolerant



Moving Forward



# Timeline for Review

- Summer & Autumn 2024  
Review with City departments,  
designers, nursery specialists
- Winter 2024 -2025  
Final publication



Right: *Shepherdia canadensis*, a wonderful native to add to the Green Factor Plants List.

# Reviewers

Reviewers of the List include:

SDOT Foresters  
SDOT Arboriculturalists  
SDCI Plan Reviewers  
SDCI Ecologists  
SPU Plant Ecologists  
SPU Foresters  
PKS Arboriculturalists  
PKS Landscape Architects

WSDOT Ecologists  
WSDOT Landscape Architects

King County Plant Ecologists

Landscape Architects at private firms

Plant specialists at local nurseries

# Format Changes

The review process has identified important potential improvements to the current format.

- Alignment of the List categories with code language
- Expansion of Notes for important observations from reviewers
- A .pdf version of the List to meet City accessibility requirements
- An .xls version of the List (with sort and filter functionality)

# Seattle Green Factor

## NOTES

### GF Score Categories (Defined in 23.86.019 of the Seattle Municipal Code)

B1: Mulch, ground covers, or other plants normally expected to be less than 2 feet tall at maturity. B2: Medium shrubs or other perennials at least 2 feet tall, but less than 4 feet tall, at maturity. B3: Large shrubs or other perennials at least 4 feet tall at maturity. B4: Small Trees. B5: Small/medium trees. B6: Medium/large trees. B7: Large trees. "Tree" means a plant defined as a tree in the Sunset Western Garden Book, 7th Edition, 2001. The size of a tree is identified as follows: 1. "Small tree" means a tree identified as a "small tree" in the Department of Transportation's "Recommended Street Trees and Planting Schedules," or a tree not listed in such schedules that is normally expected to have a spread less than or equal to 15 feet in diameter at maturity. 2. "Small/medium tree" means a tree identified as a "small/medium tree" in the Department of Transportation's "Recommended Street Trees and Planting Schedules," or a tree not listed in such schedules that is normally expected to have a spread greater than 15 feet and less than or equal to 20 feet in diameter at maturity. 3. "Medium/large tree" means a tree identified as a "medium/large tree" in the Department of Transportation's "Recommended Street Trees and Planting Schedules," or a tree not listed in such schedules that is normally expected to have a spread greater than 20 and less than or equal to 25 feet in diameter at maturity. 4. "Large tree" means a tree identified as a "large tree" in the Department of Transportation's "Recommended Street Trees and Planting Schedules," or a tree not listed in such schedules that is normally expected to have a spread greater than 25 feet in diameter at maturity.

### Native to Puget Sound; Native to PNW

Native to Puget Sound: "True" indicates plant classified as native in one or more of the following counties - Clallam County, Island County, Jefferson County, King County, Kitsap County, Mason County, Pierce County, San Juan County, Snohomish County, Thurston County, Whatcom County. **Native to PNW: Pending definition.**

### Evergreen/Deciduous; Conifer/Non-Conifer

Seattle Municipal Code includes separate requirements for Evergreen versus Deciduous plantings/trees, or Conifer/Non-Conifer trees. To make Green Factor applicable for either requirement, trees were categorized by both Evergreen/Deciduous and Conifer/Non-Conifer. Vegetation aside from trees has Evergreen/Deciduous categorization and "N/A" listed for Conifer/Non-Conifer.

### Drought Tolerant

As defined by DR2020-11: "Drought-tolerant plants are species that can thrive under the project conditions (considering for example solar exposure and soil conditions) without supplemental irrigation in required landscape areas, at least 50% of all planted area counting toward Green Factor must be drought-tolerant. Supplemental irrigation is required for an establishment period of five growing seasons." Projections of increasing temperatures and reduced precipitation in the summer resulting from Seattle's changing climate may worsen and prolong periods of drought ("Puget Sound Region: Tree Species Vulnerability Assessment"). As a result, plants designated as drought tolerant on this list would likely benefit from irrigation beyond the required establishment period of five growing seasons.

### Notes

Notes: Pending definition.

GF Score Category	Type	Scientific Name	Common Name	Native to Puget Sound	Native to PNW	Evergreen/Deciduous; Conifer/Non-Conifer	Drought Tolerant	Notes
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Allium acuminatum</i>	Taper-tip Onion	TRUE	TRUE	Deciduous; N/A	TRUE	Planting near parks/open green spaces should be avoided
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Allium ampletens</i>	Narrowleaf Onion	TRUE	TRUE	Deciduous; N/A	TRUE	
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Allium cernuum</i>	Nodding Onion	TRUE	TRUE	Deciduous; N/A	FALSE	
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Brodiaea coronaria</i>	Harvest Brodiaea	TRUE	TRUE	Deciduous; N/A	TRUE	
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Delphinium menziesii</i>	Menzies' Larkspur	TRUE	TRUE	Deciduous; N/A	TRUE	
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Delphinium nuttallianum</i>	Upland Larkspur	TRUE	TRUE	Deciduous; N/A	FALSE	
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Dichelostemma congestum</i>	Ookow	TRUE	TRUE	Deciduous; N/A	TRUE	
Plantings: Ground Cover/Other (B1)	Bulb/Rhizome/Tuber	<i>Erythronium grandiflorum</i>	Yellow Avalanche Lily, Glacier Lily	TRUE	TRUE	Deciduous; N/A	FALSE	Needs regular maintenance
Plantings: Ground Cover/Other (B1)	Fern	<i>Adiantum aleuticum</i> var. <i>aleuticum</i> / <i>Adiantum pendatum</i>	Western Maidenhair Fern	TRUE	TRUE	Deciduous; N/A	FALSE	
Plantings: Ground Cover/Other (B1)	Fern	<i>Dryopteris arguta</i>	Coastal Wood Fern	TRUE	TRUE	Deciduous; N/A	TRUE	
Plantings: Ground Cover/Other (B1)	Fern	<i>Dryopteris filix-mas</i>	Male Fern	TRUE	TRUE	Semi-deciduous; N/A	TRUE	
Plantings: Ground Cover/Other (B1)	Fern	<i>Gymnocarpium dryopteris</i>	Oak Fern	TRUE	TRUE	Deciduous; N/A	TRUE	
Plantings: Large (B3)	Shrub	<i>Abelia x grandiflora</i> (var.)	Glossy Abelia	FALSE	TRUE	Deciduous; N/A	TRUE	
Plantings: Large (B3)	Shrub	<i>Amelanchier alnifolia</i>	Servicberry	TRUE	TRUE	Deciduous; N/A	FALSE	
Plantings: Large (B3)	Shrub	<i>Arbutus unedo</i> "Compacta"	compact strawberry tree	FALSE	TRUE	Deciduous; N/A	TRUE	
Plantings: Large (B3)	Shrub	<i>Arctostaphylos columbiana</i>	Hairy Manzanita	TRUE	TRUE	Deciduous; N/A	FALSE	Needs irrigation
Plantings: Large (B3)	Shrub	<i>Berberis thunbergii</i>	Japanese barberry	FALSE	TRUE	Semi-deciduous; N/A	TRUE	
Plantings: Large (B3)	Shrub	<i>Cassinia leptophylla</i>	cassinia	FALSE	TRUE	Evergreen; N/A	FALSE	
Plantings: Large (B3)	Shrub	<i>Ceanothus Julia Phelps</i>	Small leaf Mountain lilac	FALSE	TRUE	Deciduous; N/A	TRUE	
Plantings: Large (B3)	Shrub	<i>Ceanothus velutinus</i>	Snowbrush Ceanothus	TRUE	TRUE	Semi-deciduous; N/A	FALSE	

# Share Your Perspective

- What are your observations of trees in urban settings and peri-urban greenspaces?
- Should the list include native trees with known stress issues (for example, Shore Pine which is vulnerable to Pine Bark Beetle when stressed)?
- Are there other aspects we should consider for plant selection in addition to climate adaptivity, pest/disease susceptibility, and ecological function?



Right: *Nyssa sylvatica*, the Tupelo tree, has been assessed as having high climate tolerance (“low climate vulnerability”) in a 2023 report from the USDA and Northern Forest Climate Hub. Rutledge, A.; Brandt, L.A.. 2023. *Puget Sound Region: Tree Species Vulnerability Assessment. White Paper. Houghton, MI: U.S. Department of Agriculture, Northern Forests Climate Hub.*

# THANK YOU

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